



## KEYS TO EMBRACING AGING

# Know Your Health Numbers

Modern daily life is flooded with numbers: PIN numbers, phone numbers, and various account numbers. But there are also certain health numbers that can save and extend your life. These numbers are associated with cholesterol, triglycerides, blood pressure, blood sugar, body mass index (BMI), and waist circumference.

A lifestyle including regular visits to a health-care provider, proper nutrition, and physical activity promotes these numbers and contributes to healthy aging throughout the lifespan.

### **Cholesterol: <200 mg/dl**

The recommended target cholesterol level for men and women is less than 200 milligrams per deciliter of blood. Cholesterol is a waxy substance found in the fats (lipids) in your blood. It is essential for the body to build and maintain healthy cells and essential hormones. About 25 percent of cholesterol comes from the food you eat, such as meat, fish, and dairy. The rest is made by the human body. There are two forms of cholesterol: low-density lipoprotein cholesterol (LDL) — also known as the “bad” cholesterol — and high-density lipoprotein cholesterol (HDL) — the “good” cholesterol. Too much LDL cholesterol creates a plaque that can accumulate and clog the

arteries, causing heart disease and stroke. HDL cholesterol is good because it helps clean the artery walls and carry away the excess bad cholesterol.

### **Try some of the following to increase HDL cholesterol:**

- Increase unsaturated fats in the diet, including omega-3 fatty acids (sesame, flax, pumpkin seeds or pumpkin seed oil, avocado oil, olive oil, fat in peanut butter, and fish).
- Add soluble fiber to your diet (oats, fruits, vegetables, and legumes).
- Maintain a healthy weight.
- Regularly exercise.
- Avoid smoking and secondhand smoke.
- Talk to a medical provider about medication and other treatment options.



## Cholesterol and Triglyceride Level Chart

	Desirable level to protect against heart disease	Borderline High Risk for heart disease	High Risk for heart disease
Total Blood Cholesterol	<200 mg/dl	200 to 239 mg/dl	240+ mg/dl
LDL	100 to 129 mg/dl	130 to 159 mg/dl	160 to 189 mg/dl (190+ is very high)
HDL	60+ mg/dl (the higher the better)		<40 mg/dl for men <50 mg/dl for women
Triglyceride	<150 mg/dl	150 to 199 mg/dl	200+ mg/dl (500+ is very high risk)

(Source: AHA (2012). "What Your Cholesterol Level Means.")

High cholesterol has no symptoms, and many people do not even know they are at risk. But there are known factors that can increase the risk of developing high cholesterol. Some of these factors you can control, such as diet, physical activity, and weight. Others you cannot control, including family history, age (risk goes up with age), and gender (postmenopausal women are at greatest risk).

Cholesterol can be checked through simple blood tests. The American Heart Association recommends a "fasting lipoprotein profile" every five years, starting at age 20. To fast, it is recommended that you do not eat for 9 to 12 hours before the test. This helps accurately measure the total cholesterol, LDL cholesterol, HDL cholesterol, and triglycerides in your blood. Additional screenings are recommended for men age 45 and older and women age 50 and older. Additional screenings are also recommended if total cholesterol is 200 mg/dl or higher, HDL cholesterol levels are lower than 40 mg/dl, or other risk factors for heart disease and stroke are present.

### Track Your Health Numbers

Keep up with your health numbers by writing them down in a journal or medical log that is kept in a safe place. This will help you track your health patterns and set health goals.

## Fasting Triglyceride Level: <150 mg/dl

According to the American Heart Association, a fasting triglyceride level of less than 150 mg/dl is healthy. Triglycerides, like cholesterol, are a form of fat that circulate in the bloodstream. Triglycerides are responsible for the energy tissues need to function. Similar to cholesterol, when the blood levels of triglycerides become too high (e.g., over 200 mg/dl), the risk for developing heart disease increases. Triglycerides are often measured with cholesterol and should be tested every five years beginning at age 20 or more often depending on risk factors.

### Dietary and lifestyle changes help lower triglyceride levels:

- Maintain a healthy body weight.
- Avoid fatty foods and foods high in cholesterol such as processed meat, fried food, and whole-fat dairy products.
- Eat fruits, vegetables, and nonfat or low-fat dairy products most often.
- Eat foods high in good, unsaturated fats.
- Do not drink alcohol in excess.
- Exercise moderately for at least 150 minutes per week.

## Blood Pressure Chart

Blood Pressure Category	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)	What to do*
Normal	less than 120	and	less than 80	Maintain or adopt healthy lifestyle
Prehypertension	120 to 139	or	80 to 89	Maintain or adopt healthy lifestyle
High Blood Pressure (Hypertension) Stage 1	140 to 159	or	90 to 99	Maintain or adopt a healthy lifestyle. If blood pressure goal isn't reached in about six months, talk to your doctor about taking one or more medications.
High Blood Pressure (Hypertension) Stage 2	160 or higher	or	100 or higher	Maintain or adopt a healthy lifestyle. Talk to your doctor about taking more than one medication.
Hypertensive Crisis	Higher than 180	or	Higher than 110	Emergency Care Needed

(Sources: AHA (2013) and Mayo Clinic (2012). \*Mayo Clinic recommendations.)

Note: According to the Mayo Clinic, "ranges may be lower for children and teenagers." They recommend talking to your child's doctor if there is concern regarding high blood pressure.

The AHA recommends having a doctor "evaluate unusually low blood pressure readings."

## Blood Pressure: <120/80 mm Hg

Blood pressure can vary from minute to minute with changes in exercise, stress, sleep, and posture, but it should normally be less than 120/80 mm Hg (millimeters of mercury). Blood pressure is recorded as two numbers, and written as a ratio. The top number, referred to as the systolic blood pressure, measures the pressure in the arteries when the heart beats. The diastolic, or bottom number, refers to the amount of pressure in the arteries when the heart is resting and refilling with blood between heartbeats.

Hypertension, or high blood pressure, is a condition that causes the pressure in the heart to change. A variety of factors are linked to high blood pressure, including age; a diet too high in sodium or too low in potassium, calcium, and magnesium; excess alcohol; smoking; being overweight or obese; high cholesterol; lack of exercise; stress; and being insulin resistant.

Hypertension has few symptoms, but it can permanently damage the heart, brain, eyes, and kidneys even before anything feels wrong. The American Heart Association recommends blood pressure screenings

beginning at age 20 and to continue at each regular health-care visit or at least once every two years. If your blood pressure is consistently higher than 120/80 mm Hg, you may be asked to measure it more often. Blood pressure can also be checked at home with an over-the-counter blood pressure monitoring system.

Low blood pressure can also cause concern. Low blood pressure, referred to as hypotension, occurs when the flow of blood is lower than normal. This may prevent the proper amount of oxygen and nutrients from being pumped into vital organs. Dehydration and nutrient deficiency are two possible causes of low blood pressure. Signs of low blood pressure include dizziness, lightheadedness, fainting, dehydration or unusual thirst, lack of concentration, blurred vision, nausea, and fatigue.

### ***Maintaining a healthy blood pressure can be simple and easy:***

- Eat a diet rich in fruits, vegetables, whole grains, and low-fat or nonfat dairy products.
- Avoid excess salt.

- Engage in regular physical activity.
- Maintain a healthy weight.
- Manage stress.
- Avoid tobacco.
- Limit alcohol.

### ***Fasting Blood Sugar: <100 mg/dl***

Blood sugar, or glucose, is a type of sugar that travels through the blood stream. It comes from carbohydrate foods and acts as a basic fuel for the body. The three main types of carbohydrates in food include sugars, starches, and fiber. The Mayo Clinic emphasizes the importance of a balanced diet with healthy carbohydrates. Healthy carbohydrates include:

- Fiber-rich fruits and vegetables without added sugar
- Whole grains
- Low-fat dairy
- Beans and legumes
- Limited sugar

There are several different types of blood glucose tests, including fasting blood sugar, which is measured six to eight hours after a meal. In a nondiabetic person, this fasting number provides an accurate measure of blood sugar. The normal range of blood sugar is approximately 70 to 100 milligrams per deciliter. After a meal, blood sugar will rise but not usually above 135 to 140 milligrams per deciliter, leaving a fairly narrow range of blood sugar throughout the entire day.

Glucose levels consistently lower than 70 mg/dl is called hypoglycemia, or low blood sugar. This can result in blurred vision, pounding heartbeat, agitation, nervousness, hunger, headaches, shakiness or trembling, sweating, weakness, drowsiness, insomnia, and unclear thinking. If sugar levels get too low, mental functioning can become impaired, and eventually seizures and unconsciousness may be experienced. While these symptoms are often corrected by eating something sweet, severe hypoglycemia can be a dangerous medical emergency for which you should call for help right away.

Hyperglycemia, or high blood sugar, occurs when the blood glucose levels get above 180 to 200 mg/dl because of too little insulin or when the body cannot use insulin properly. These high levels affect the kidneys' ability to properly function and can also cause frequent urination, blurred vision, high blood pressure, extreme thirst, weakness or fatigue, dry mouth, unexplained weight loss, and fluid retention.

Diabetes is the most common disease related to blood sugar regulation failure based on the body's inability to produce and/or use the hormone insulin, which helps the body regulate glucose. It affects more than 25.8 million children and adults. If left untreated, diabetes can cause many medical complications including cardiovascular disease, kidney disease, unhealthy cholesterol levels, clogged arteries, metabolic syndrome, blindness, nerve disease, limb amputations, and even death. To maintain healthy blood sugar levels and prevent diabetes:

- Exercise regularly.
- Eat plenty of fiber and whole grains.
- Maintain a healthy weight.
- Skip fad diets and make healthy choices.

### ***Body Mass Index (BMI): 18.5-24.9***

BMI stands for body mass index, a ratio between height and weight used as a tool to help judge body fat and weight. BMI calculations group weight into five categories: underweight, normal, overweight, obese, and extremely obese. The normal BMI range for adults is 18.5 to 24.5. Generally speaking, an adult BMI of 25 is considered overweight and 30 or above is obese. A BMI of less than 18.5 indicates underweight. All overweight and underweight individuals should consult with a medical provider. Beginning at age 20, BMI should be assessed at each regular health-care visit.

The BMI weight categories help indicate the risk of severe health problems, including heart disease, stroke, high blood pressure, high cholesterol, cancer, diabetes, sleep apnea, osteoarthritis, female infertility, urinary stress incontinence, and gastroesophageal reflux. However, there are certain people who should not use BMI as the basis for determining relative disease risk.

## BMI Chart

BMI	Rating	What to Do
Below 18.5	Underweight	Consult a health provider. Low body mass can weaken the immune system and lead to illness.
18.5 to 24.9	Normal weight	Maintain exercising and eating healthy.
25 to 29.9	Overweight	Find healthy ways to lower weight, including healthy eating and exercise.
30+	Obese	At serious risk for heart disease, diabetes, high blood pressure, gall bladder disease, and some cancers. Talk to a health-care provider and modify your lifestyle.

Sources: AHA, 2012; CDC, 2011

Athletes and body builders, whose BMI is high due to muscle, and women who are pregnant or lactating should not be disturbed if their BMI is not within the normal range.

Adults (20 years and older) can calculate their BMI using the following formula:  $\text{weight (lb)} \div [\text{height (in)}]^2 \times 703$ . Children and teens (2 to 19 years old) are recommended to use the free online calculator at the CDC as the interpretation of their BMI is both age- and sex-specific: [www.cdc.gov/healthyweight/assessing/bmi/index.html](http://www.cdc.gov/healthyweight/assessing/bmi/index.html).

### To take control of your BMI:

- Burn more calories than you consume by exercising and maintaining a healthy lifestyle.
- Eat a well-balanced diet.
- Exercise 150 minutes a week (minimum) for adults.
- Lose or gain weight in a healthy manner.
- Consult with a medical provider.

### How to Measure Waist Circumference

According to the CDC (2011), "to measure your waist size (circumference), place a tape measure around your bare abdomen just above your hip bone. Be sure that the tape is snug, but does not compress your skin, and is parallel to the floor. Relax, exhale, and measure your waist."

Source: CDC (2011)

### Waist Circumference: Males: < 40; Females: < 35

Fat distribution is now just as important as total body weight when it comes to weight-related health problems. This is because body fat that accumulates around the waist and stomach area poses a greater risk than fat stored in the lower half of the body. Therefore, the measurement of your waist size (circumference), like BMI, can predict future health problems, including type 2 diabetes, dyslipidemia, hypertension, and cardiovascular disease, especially when BMI is between 25 and 35. Waist size can also be useful for athletes who are categorized as overweight in terms of BMI. For example, an athlete with increased muscle mass may have a BMI greater than 25 — making him or her overweight on the BMI scale — but a waist circumference measurement would most likely indicate that he or she is, in fact, not overweight.

The American Heart Association recommends a waist circumference of 40 inches or less for men and 35 inches or less for women. Beginning at age 20, you should measure your waist circumference and look for changes in measurement over time. This can indicate an increase or decrease in abdominal fat, which is associated with an increased risk of heart disease and other chronic diseases.

## Conclusion

Keeping up with your numbers is an important way to maintain a healthy lifestyle and optimal aging throughout the lifespan. Keeping up with your numbers can also help you reduce negative health effects such as obesity, diseases of the heart, hypertension, diabetes, and cancers.

## References

- American Diabetes Association (2013). Diabetes statistics. Retrieved from <http://www.diabetes.org/diabetes-basics/diabetes-statistics/?loc=DropDownDB-stats>
- American Diabetes Association (2013). Living with diabetes: Hyperglycemia. Retrieved from <http://www.diabetes.org/living-with-diabetes/treatment-and-care/blood-glucose-control/hyperglycemia.html>
- American Heart Association (AHA). (2012). About cholesterol. Retrieved from [http://www.heart.org/HEARTORG/Conditions/Cholesterol/AboutCholesterol/About-Cholesterol\\_UCM\\_001220\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/Cholesterol/AboutCholesterol/About-Cholesterol_UCM_001220_Article.jsp)
- American Heart Association (AHA). (2012). BMI. Retrieved from [http://www.heart.org/HEARTORG/GettingHealthy/WeightManagement/BodyMassIndex/Body-Mass-Index-BMI-Calculator\\_UCM\\_307849\\_Article.jsp](http://www.heart.org/HEARTORG/GettingHealthy/WeightManagement/BodyMassIndex/Body-Mass-Index-BMI-Calculator_UCM_307849_Article.jsp)
- American Heart Association (AHA). (2010). Body composition tests. Retrieved from [http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Body-Composition-Tests\\_UCM\\_305883\\_Article.jsp](http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Body-Composition-Tests_UCM_305883_Article.jsp)
- American Heart Association (AHA). (2012). How to get your cholesterol tested. Retrieved from [http://www.heart.org/HEARTORG/Conditions/Cholesterol/SymptomsDiagnosisMonitoringofHighCholesterol/How-To-Get-Your-Cholesterol-Tested\\_UCM\\_305595\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/Cholesterol/SymptomsDiagnosisMonitoringofHighCholesterol/How-To-Get-Your-Cholesterol-Tested_UCM_305595_Article.jsp)
- American Heart Association (AHA). (2013). What your cholesterol levels mean. Retrieved from [http://www.heart.org/HEARTORG/Conditions/Cholesterol/AboutCholesterol/What-Your-Cholesterol-Levels-Mean\\_UCM\\_305562\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/Cholesterol/AboutCholesterol/What-Your-Cholesterol-Levels-Mean_UCM_305562_Article.jsp)
- American Heart Association (AHA). (2012). Triglycerides. Retrieved from [http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Triglycerides\\_UCM\\_306029\\_Article.jsp](http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Triglycerides_UCM_306029_Article.jsp)
- American Heart Association (AHA). (2013). Understanding blood pressure readings. Retrieved from [http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/Understanding-Blood-Pressure-Readings\\_UCM\\_301764\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/Understanding-Blood-Pressure-Readings_UCM_301764_Article.jsp)
- Centers for Disease Control and Prevention (CDC). (2011). National Diabetes Fact Sheet. Retrieved from [http://www.cdc.gov/diabetes/pubs/pdf/ndfs\\_2011.pdf](http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf)
- Centers for Disease Control and Prevention (CDC). (2011). Healthy weight: It's not a diet, it's a lifestyle. Retrieved from [http://www.cdc.gov/healthyweight/assessing/bmi/adult\\_bmi/index.html](http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html)
- Centers for Disease Control and Prevention (CDC). (2010). LDL and HDL. Retrieved from [http://www.cdc.gov/cholesterol/ldl\\_hdl.htm](http://www.cdc.gov/cholesterol/ldl_hdl.htm)
- Christian A.H., et al "Waist Circumference, Body Mass Index, and their Association with Cardiometabolic and Global Risk Among Whites and Racial/Ethnic Minorities" AHA Meeting 2007; Abstract 3551.
- Mayo Clinic. (2013). Diabetes. Retrieved from <http://www.mayoclinic.com/health/diabetes/DS01121>
- Mayo Clinic. (2011). High blood pressure (hypertension). Retrieved from [www.mayoclinic.com/health/blood-pressure/HI00043](http://www.mayoclinic.com/health/blood-pressure/HI00043)
- Mayo Clinic. (2012). Hyperglycemia in diabetes. Retrieved from <http://www.mayoclinic.com/health/hyperglycemia/DS01168>
- Mayo Clinic. (2011). Nutrition and healthy eating. Retrieved from <http://www.mayoclinic.com/health/carbohydrates/my01458>
- MedicinePlus for NIH (2010). Triglyceride level. Retrieved from [www.nlm.nih.gov/medlineplus/ency/article/003493.htm](http://www.nlm.nih.gov/medlineplus/ency/article/003493.htm)
- National Heart Lung and Blood Institute (NHLBI) (2013). Assessing your weight and health risk. Retrieved from [http://www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/risk.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/risk.htm)
- National Heart Lung and Blood Institute (NHLBI) (2011). What causes overweight and obesity? Retrieved from [www.nhlbi.nih.gov/health/dci/Diseases/obe/obe\\_causes.html](http://www.nhlbi.nih.gov/health/dci/Diseases/obe/obe_causes.html)
- National Institute of Health (NIH) (2011). Cholesterol. Retrieved from [health.nih.gov/topic/Cholesterol](http://health.nih.gov/topic/Cholesterol)
- National Institute of Health (NIH) (2008). Insulin resistance and pre-diabetes. Retrieved from [diabetes.niddk.nih.gov/dm/pubs/insulinresistance/](http://diabetes.niddk.nih.gov/dm/pubs/insulinresistance/)
- National Institute of Health (NIH) (2012). Hypoglycemia. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001423/>
- United States Department of Agriculture (USDA) (2011). Choose MyPlate. Retrieved from [www.choosemyplate.gov](http://www.choosemyplate.gov)





Adapted and used with permission of the University of Arkansas Research and Extension, and the University of Kentucky College of Agriculture.

### ***Authors***

**Erin Yelland**, Ph.D., CFLE, Assistant Professor and Extension Specialist, Adult Development and Aging, K-State Research and Extension

**Amy F. Hosier**, Associate Professor, University of Kentucky

**LaVona S. Traywick**, Associate Professor, University of Arkansas

### ***Reviewers***

**Dr. Rosalie Otters**, University of Arkansas

**Dr. Lisa Washburn**, University of Arkansas



Publications from Kansas State University are available at [www.ksre.ksu.edu](http://www.ksre.ksu.edu)

Publications are reviewed or revised annually by appropriate faculty to reflect current research and practice. Date shown is that of publication or last revision. Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit author, *Keys to Embracing Aging: Know Your Health Numbers*, Kansas State University, December 2015.

### **Kansas State University Agricultural Experiment Station and Cooperative Extension Service**

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, John D. Floros, Director.

MF3263 December 2015